# New Jersey Department of Environmental Protection

**POSITION PAPER on Remedy Selection**

**for the**

**Ringwood Mines Landfill Superfund Site**

The New Jersey Department of Environmental Protection (NJDEP or Department) appreciates this opportunity to present the State's position on the remedial action approach for the three (3) primary landfill/disposal areas located within the Ringwood Mines Landfill Superfund Site. The Department has been closely involved in the ongoing remedial investigation work, removal work and feasibility study work related to the Ringwood Superfund Site. The Department has reviewed and commented on all documents generated throughout this Superfund process that restarted in 2004. In addition, the Department has worked closely with the Ringwood Community and elected Borough officials and representatives from the NJDEP attend all Community Advisory Group meetings, public meetings and technical meetings related to the site. The Department was the lead agency for removal of visible paint sludges exposed at the surface on 3 residential properties in the Fall of 2005 and the lead agency for the Remedial Investigation of nineteen (19) residential properties, conducted in 2010 and 2011.

The Department recognizes that each of the 3 primary disposal areas possess unique characteristics that may warrant different approaches with respect to remedial action implementation. The State also recognizes and appreciates the strong feelings and concerns that the local residents have regarding the cleanup approach for this Superfund Site. Since work at this site restarted in 2004, the Department has worked very closely with USEPA Region 2, the health agencies, the community members and Ford Motor Company and their contractors. It is our opinion that all of the individuals involved in this effort have been fully cooperative and sincere in every aspect of project and that a great deal of progress has been made in cleaning up this site and restoring large areas of natural habitat and park land. The State is confident that this attitude of cooperation and sincerity will continue through the completion of the cleanup phases of this project.

Below, the Department has outlined what we believe is a reasonable, protective, and effective approach to remedial action implementation at each of the 3 primary disposal areas. These approaches are presented with the assumption that ongoing remedial investigations for the Site-Wide Ground Water operable unit will **not** reveal any new, significant information that substantially changes our understanding of the ground water quality and contaminant migration potential, which has been established to date, throughout the site.

## I. O'CONNOR DISPOSAL AREA

The O'Connor Disposal Area (OCDA) is an area of land that slopes gently from Peter's Mine Road down to Park Brook. This area was likely a healthy wetland buffer zone adjacent to the Brook before it was

first disturbed by the iron ore mining companies for use as a "slime tailings" lagoon area. It appears that soil berms were constructed directly adjacent to Park Brook to create a lagoon between the elevated Peter's Mine Road and the soil berms along the Brook. After the mining operations ceased, the area was used for dumping by Ford, the Borough and others. While Ford has removed significant quantities of paint sludge and drums from the OCDA, the area still contains significant amounts of debris, heterogeneous fill and still contains some paint sludge and possibly drums of waste from Ford's use of the area. The OCDA is very similar in elevation and physical character to the SR-3 Area (Sludge Removal Area #3), which is immediately north and adjacent the OCDA. Sludge, debris and drums were removed from the SR-3 area several years ago and the area has been properly restored, in accordance with an NJDEP approved mitigation plan, as a wetland buffer zone adjacent to the Brook.

**NJDEP RECOMMENDATION:** The Department has no formal comment on this operable unit at this time.

**CANNON MINE PIT**

While the Cannon Mine Pit is documented to be 140 to 180 feet deep, Ford/ARCADIS contends that only approximately the top 50 feet of the pit is filled with waste material from Ford. Ford's review of historical memorandum indicate that the pit was blasted closed in the fall of 1965, prior to Ford's use of the site for waste disposal. The mine workings extend to even greater depths from the bottom of the Cannon Mine Pit. There is no information to determine if the pit was used for waste disposal prior to the blasting in 1965. Based on the ARCADIS remedial investigation effort, there is only approximately 47 feet of fill at this location, which was deposited after the mine pit walls were blasted to seal the pit. Ford/ARCADIS claim that the 47 feet of fill consists mostly of municipal waste, some mine tailings and some industrial wastes from Ford's Mahwah plant. While Ford/ACADIS did not identify any paint sludge in their borings or test pits into the fill, they did remove drums and drum remnants from this area. Accordingly, there is potential for more buried drums and there could be some paint sludge within the 47 feet of fill material above the blast rock and waste rock. Paint sludge was found and removed from the surface of the New London Pit, immediately adjacent to/contiguous with the Cannon Mine pit. Investigation of the pit contents below approximately 70 feet deep could not be completed due to the presence of the blast rock and rubble. There is no information available to confirm or deny whether any waste materials are buried within or below the blast rock and waste rock.

**NJDEP RECOMMENDATION: DRAFT FS Alternative 3A --** The Department recommends that all industrial and municipal wastes within the top 50 feet of the Cannon Mine pit be re-compacted and any drum or drum remnants found during re-compaction must be removed for disposal offsite. The Pit can then be backfilled with clean fill for grading/mounding and capped with vegetated soil covering. ARCADIS estimates that 46,000 tons of material comprise the waste fill at the Cannon Mine Pit. The Cannon Mine Airshaft must also be permanently sealed, assuming that testing of the ground water in this shaft demonstrates that it is free of contamination after re-compaction and reworking the fill material. The shaft should be filled with rock/stone and the surface opening permanently sealed. No

long-term monitoring or maintenance of the Cannon Mine Pit would be required for this remedial approach, since ground water has proven to be free of contamination. This approach would render this area safe and suitable for continued use by the community for hunting and hiking (passive uses). This remedial approach would require placement of a Deed Notice on the area of concern from the Borough of Ringwood as the property owner. Long-term monitoring and maintenance of this capped area would be required, including Biennial Certification reporting to the Department. This area should not be used for redevelopment due to the risk associated with underground voids related to past mining operations. Such voids could cause future settlement of the blast rock, fill and cap materials. **ESTIMATED Cost = $2 million dollars**

II. **PETER'S MINE PIT**

The Peter's Mine Pit is the largest landfill disposal area within the Ringwood Mines Landfill Superfund Site study area. The pit is estimated to be 100 feet deep and approximately 300 feet long. The Pit is filled with mine tailings, municipal wastes, and industrial wastes. Paint sludges were found within the Pit. It is likely that the pit contains some drums and drum remnants in addition to the paint sludges from Ford's Mahwah plant. Low levels of contamination have been found in ground water in the pit and immediately down gradient of the pit. Benzene contamination at 30 ppb has consistently been found in deep ground water samples collected from the Air Shaft which is connected to the Pit. Additional RI efforts are underway to determine if this ground water contamination associated with this Pit is migrating off-site. The quantity of wastes within this Pit is estimated at 170,000 tons.

**NJDEP Recommendation: Version of DRAFT FS Alternative 6A --** The Department recommends that a remedial approach similar to what ARCADIS describes in Alternative 6A, with some modifications, be implemented for this Pit. The Department's recommended approach for the Peter's Mine Pit assumes that the results of the ongoing Site-Wide Ground Water Remedial Investigation will definitively show that no significant off-site migration of contaminants is occurring in groundwater or surface waters within and near the site. In addition, the Department and the Community must have confidence that the monitoring wells surrounding this pit are effectively monitoring the identified ground water contamination and intercepting any potential migration pathways.

The historic fill surrounding the rim of the pit should be excavated and hazardous materials segregated for offsite disposal. Remaining non-hazardous materials can be used as backfill, along with additional clean fill, mine tailings (from OCDA) and any available blast rock/waste mine rock. The Pit can then be regraded, compacted and capped with an engineered, permeable, vegetated soil cap. The ponded area would be eliminated with the added clean fill, mine tailings and engineered cap. Long-term maintenance of the engineered cap would insure that any additional settlement of the fill and cap is mitigated, to prevent the formation of a ponded area on the cap surface. The Peter's Mine Airshaft must also be permanently sealed and filled with stone/rock.

This area will require a Deed Notice from NJDEP for leaving contamination on State Park property under an engineered cap. Long-term monitoring and maintenance (Biennial Certification to NJDEP, cap maintenance and CEA monitoring) will be required for this remedial approach. This area can be re-

opened for future passive uses as parkland (i.e. hiking and hunting). **ESTIMATED Cost = $11 million dollars**